BARWACKI, S. ; BILSKI, E. ; ROSNOWSKI, S.

Results of the experiments with sugar-beet varieties carried out in Poland in the years 1947-1951.

P. 5. (ROCZNIKI NAUK ROLNICZYCH. POLISH AGRICULTURAL ANNUAL. SERIA D: MONOGRAFIE:) (Warszawa, Poland) Vol. 73, 1958

SO: Monthly Index of East European Accession (MEAI) LC Vol. 7, No. 5, 1958

BARBACKI, Stefan

Scientific activities of Professor Edmund Malinowski. Rocz nauk roln rosl 83 no.1:215-228 '60. (EEAI 10:7)
(Botanists, Polish)

BARBACKI, Stefan, prof.

Activities in the Institute of Plant Genetics in Poznan.
Nauka Pol 9 no.4:153-160 O-D '61.

1. Czlonek korespondent Polskiej Akademii Nauk, Kierownik Zakladu Genetyki Roslin, Poznan 29, ul Wojska Polskiego 71 c.

BARRACKI, Stefan, professor

Activities of the Institute of Plant Genetics of the Polish Academy of Sciences, Poznan. Review Pol Academy 7 no.1:45-49 Ja-Mr '62

1. Director of the Institute of Plant Genetics, Polish Academy of Sciences, Poznan, Wojska Polskiego 71 c.

BARBACKI, Stefan

Cooperation and planning in plant production. Postepy nauk roln 9 no.4:3-9 Jl-Ag '62.

BARBACKI, Stefan

Dr. Edward Kostecki, 50 years of creative work in plant growing. Postepy nauk roln 9 no.4:129-131 Jl-Ag '62.

BARBACKI, Stefan

Education of candidates for doctor's degrees. Nauka polska 10 no.5: 107-113 S-O '62.

1. Czlonek Korespondent Polskiej Akademii Nauk, Poznan.

BARBACKI, Stefan (Poznan)

Remarks on the organization of agricultural sciences in Poland. Nauka polska 10 no.6:1-12 N-D '62.

1. Czlonek korespondent Polskie Akademii Nauk, Warszawa.

BARBACKI, Stefan

Some notes on the organization of agricultural sciences in Poland. Review Pol Academy 8 no.1:11-15 Ja-Mr '63.

BARBACKI, Stefan

Genetics and breeding of fodder plants in the 20-year postwar period in Poland. Postepy nauk roln 11 no.6:3-16 N-D '64.

BARBAG, JOZEF.

Barbag, Jozef. Geografia gospodarcza Polski dla klasy X. (Wyd. 1.) Warszawa, Panstwowe Zaklady Wydawn. Szkolnych, 1952. 324 p. (Economic geography of Poland; a textbook for the 10th year of general school)

SO: Monthly list of East European Accessions, LC, Vol. 3, No. 1, Jan. 1954, Uncl.

BARBAG, J.

Geografia W Szkole - Vol. 7, no. 6, Nov./Dec. 1954.

Five years of the development of China. p. 281.

SO: Monthly list of East European Accessions, (EEAL), LC, Vol. 4, No. 9, Sept. 1955
Uncl.

BARBAG, J.

Economic and social changes in India. p. 59. GEOGRAGIA W SZKOLE. (Ministerstwo Oswiaty, Polskie Towarystwo Geograficzne) Warszawa. Vol. 9, No. 2, Mar. Apr. 1956.

SOURCE: East European Accessions List (EEAL) Library of Congress Vol. 5, No. 11, August 1956.

[illegible], J.

Dynamic Electrons (Statistical Theory) in [illegible] Energy. [illegible]

[illegible] W. [illegible]. (Physics-Astronomy-Geology, [illegible] Physics [illegible] Problems)
Vol. [illegible], No. [illegible], Sept./Oct. 1[illegible]

Warsaw, Poland

S. [illegible]: [illegible] (E[illegible]) [illegible] Engineering,
Vol. [illegible], No. 1, January 1[illegible]

Ta[illegible]ło, J.

19th Congress of the International Geographical Union. p. 9.
(Geografia i Szkoła, Vol. 10, no. 1, Jan./Feb. 1957. Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

RUBAN, Jozef (Warszawa)

The position of political geography in the system of earth sciences. Czasop geograf 35 no.3/4:355-370 '64

BARBAG, Jozef; PIOTROWSKI, Stefan; SMIAŁOWSKI, Michał (Warszawa)

Present state of the sciences belonging to the scope of activities of Department III of the Polish Academy of Sciences. Nauka polska 12 no.2:48-81 '64.

BAR BAIAHI M

J 2391. Barbaiani, M., Precast concrete members used for social cultural housing projects (in Rumanian), *Indust. constr. Mater. constr.* 7, 8, 478-484, 1956.

Various types of pitched roof, floors, and ceilings assembled of precast and prefabricated members are described and illustrated and their advantages and costs discussed.

J. J. Polivka, USA

aaf

BARBAIANI, M.

BARBAIANI, M. Prefabrication of framwork for social cultural buildings and dwellings. p. 478.

Vol. 4, No. 8, August 1956
ELECTROTEHNICA
TECHNOLOGY
Bucuresti

So: East European Accession, Vol. 6, No. 3, March 1957

PISLARASU, C.,ing.; AGENT, V., arh.; MACRI, R., arh.; MARCOVICI, A., ing.; BARBAIANI, M., ing.; NEACSU, I., ing.; APROTEANU, V., ing.

Construction of apartment houses with many stories achieved by gliding shuttering in Bucharest. Rev constr si mat constr 15 no. 12: 610-617 D '63.

DROGEANU, N., prof. ing.; DRIMER, M., ing.; LASZLO, N.; BARBALINI, M., ing.

Evolution of structure resistance of apartment houses. Rev constr si mat constr 16 no.8:393-410 Ag '64.

1. State Committee for Constructions, Architecture, and Town Planning (for Drogeanu). 2. Head of Workshop, Institute of Technical Construction Planning (for Drimer). 3. Chief Engineer, General Institute of Studies, Scientific Research, and Planning for Construction Architecture and Town Planning, Bucharest. (for Laszlo). 4. Head of Workshop, Central Institute of Studies, Scientific Research, and Planning for Construction, Architecture, and Town Planning, Bucharest (for Barbalini).

TAVADZE, F.N.; BARBAKADZE, A.

Complex effect of manganese and antimony on the antifriction properties of aluminum. Trudy Inst. met. AN Gruz. SSR 10:69-85 '60. (MIRA 13:12)

(Bearing metals--Metallography)
(Aluminum-manganese-antimony alloys--Metallography)

25450

S/137/61/000/006/082/092
A006/A101

18 1210

AUTHORS: Tavadze, F.N., Barbakadze, A.

TITLE: The complex effect of manganese and antimony on antifriction properties of aluminum

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1961, 24-25, abstract 6I172 ("Tr. In-ta metallurgii AN GruzSSR", 1960, v. 10, 69-85, Georgian, Russian summary)

TEXT: The authors investigated the effect of Mn and Sb on the antifriction properties of Al in the following alloys: Al-Mn (0.5-3.5%), Al-Sb (1-6%), Al-Mn-Sb (0.5-3.5% Mn and 0.9-6.0% Sb). It was established that alloys containing 3-3.5 and 0.5-3.5% Mn at a constant amount of 1.0% Sb, meet the metallographical requirements of antifriction properties. An addition of > 3% Sb sharply reduces the ductility of Al alloys. Addition of Sb up to 2% into Al alloys containing 0.5-3.5% Mn, raises wear resistance of the alloys. At temperatures elevated from 20 to 200°C, the hardness of the alloys is slightly reduced. Optimum antifriction

Card 1/2

25450

The complex effect ...

S/137/61/000/006/082/092
A006/A101

properties are shown by alloys which contain in %: Mn 3.0, Mn 0.5 + Sb 1.0, and Mn 3.5 + Sb. 1.0. There are 13 references.

T. Rumyantseva

[Abstracter's note: Complete translation]

Card 2/2

137-58-6-13551

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 339 (USSR)

AUTHOR: Barbakadze, A.K.

TITLE: Combined Influence of Ni and Mn on Mechanical Properties of Aluminum (Sovmestnoye vliyaniye nikelya i margantsa na mekhanicheskiye svoystva alyuminiya)

PERIODICAL: Tr. Gruz. s.-kh. in-ta, 1957, Vol 44, pp 353-362

ABSTRACT: The combined influence of the addition of Ni and Mn on mechanical and anti-frictional properties of Al alloys was investigated. Alloys of the Al-Ni-Mn system (Al section of the phase diagram) containing up to 3.5% of Ni and Mn were studied. Electrolytic Ni, Mn, and Al of the A 99.0 grade were utilized in producing the alloys. Experimental smeltings were carried out in a graphite crucible. Specimens were cast into metal molds which had been preheated to 200-250°C. The properties of the alloys were studied on cast specimens. The studies were performed on the basis of a comparison with the babbits BN and B-83. Experimental data were employed to construct three-dimensional diagrams showing the variations in hardness, σ_b, δ, and a_k of alloys as functions of their content of Ni and Mn.

Card 1/2

137-58-6-13551

Combined Influence of Ni and Mn on Mechanical Properties of Aluminum

On the strength of these diagrams curves of equivalent mechanical properties were plotted, thus making it possible to determine the chemical composition required of a given alloy to achieve the respective properties. All mechanical properties of the alloys investigated (Al-Ni-Mn system) are superior to the corresponding properties of the babbits BN and B-83.

Z.Kh.

1. Aluminum--Mechanical properties 2. Nickel--Metallurgical effects
3. Maganese--Metallurgical effects

Card 2/2

TAVADZE, F.N.; SHARADZENIDZE, S.A.; BARBAKADZE, D.F.

Core sampling from mold walls for the study of their structure and of the mold metal properties. Stal' 22 no.4:374-375 Ap '62. (MIRA 15:5)

(Ingot molds--Testing)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103530006-3"

K

Country : USSR
Category: Forestry. Forest Management.

Abs Jour: RZhBiol., No 11, 1958, No 48744

Author : Barbakadze, I.M.
Inst : Forestry Institute AS Georgian SSR
Title : An Experiment in the Reconstruction of the Short-Stemmed Deciduous Forests.

Orig Pub: Tr. In-ta lesa. AN GruzSSR, 1957, 7, 241-255

Abstract: Experiments were started in 1933-1936 in the Akhaldab district (Georgian SSR) where the cut pine plantations were replaced with hardwood species. On slopes 20° steep, the hardwood species were cut by shelterwood and strip methods. The common pine and the black pine were introduced into

Card : 1/2

Country : USSR
Category: Forestry. Forest Management. K

Abs Jour: RZhBiol., No 11, 1958, No 48744

the cut areas by sowing and planting. The article cites technical recommendations.

Card : 2/2

BARBAKADZE, I.M.

Study of the vegetative reproduction of conifers. Trudy Inst. Lesa AN Gruz.SSR 12:217-222 '63.

USSR / Human and Animal Physiology (Normal and Pathological). Blood. T-4

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 60168

Author : Barbakadze, L. V.
Inst : Not given
Title : Improvement of the Counting Technique of the Elements of the Leukocyte Formula and of the Bone Marrow

Orig Pub : Labor. delo, 1957, No 2, 18-19

Abstract : The construction of a moving platform is described, which permits the movement of the preparation of the leukocyte formula count and of the myelogram in a sharply defined "meander" line. -- M. B. Gol'dberg

Card 1/1

BAGDAVADZE, N.V.; BARBAKADZE, L.V.; GRIGIN[illegible], E.L.; KUCHAV[illegible], N.Ye.; MOSELISHVILI, L.M.; KHARADAMZE, N.Ye.

Radioactivation method for determining gold in the blood. Sob. AN Gruz. SSR 39 no.2:287-294 Ag '65. (MIRA 18:9)

1. Institut fiziki AN GruzSSR. Submitted January 15, 1965.

BARBAKADZE, Mikhail Mikhaylovich, inzh.; DZHANELIDZE, Ledi Shalvovna, inzh.

Calculation of dissipation resistance of a static phase splitter. Izv.vys.ucheb.zav.; elektromekh. 5 no.9:974-977 '62. (MIRA 16:1)

1. Otdel elektricheskikh mashin Nauchno-issledovatel'skogo elektrotekhnicheskogo instituta Gruzinskoy SSR.
(Electric transformers)

BARBAKADZE, YE. O

4101* Study of the Erosion of Cements for Hydraulic-Engineering Concretes. **Issledovanie istiraniia tsementov dlia gidrotekhnicheskikh betonov.** (Russian.) V. N. Iung, Iu. M. Butt, M. S. Neginskii, and E. O. Barbakadze. *Tsement*, v. 21, no. 6, Nov.-Dec. 1955, p. 5-9.

Effect of fast-flowing water. Compositions, erosibility, and compressive strength of cements. Effect of additives on erosibility. Tables.

3

MT

BARBAKADZE, YE. O.

USSR/Chemical Technology - Chemical Products and Their Application. Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62384

Author: Yung, V. N., Butt, Yu. M., Neginskiy, M. S., Barbakadze, Ye. O.

Institution: None

Title: Attrition Resistance of Hydraulic Engineering Concrete

Original Periodical: Tr. Mosk. khim.-tekhnol. in-ta, 1956, No 21, 147-154

Abstract: A study of attrition resistance of concrete exposed to a flow of water carrying suspended rock particles. The experiments have shown that inclusion in the cement of hydraulic and microfiller additives lowers the resistance of concrete to attrition. Finer grinding of cement increases the resistance to attrition of concrete made therefrom. To obtain a concrete resistant to attrition it is important to take into account the hardness of aggregate particles. It is recommended to use as coarse aggregate in such a concrete crushed granite or other hard rock which must be subjected to preliminary

Card 1/2

USSR/Chemical Technology - Chemical Products and Their Application. Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62384

Abstract: tests. Resistance to attrition of 1:2:3 concrete and 1:2.5 solutions made from the same cement is found on comparison to be 3 times higher in the case of concrete, within all of the investigated periods, and strength of concrete is 1.3 times greater. Increase of water/cement decreases resistance of concrete to attrition. On raising water-cement from 0.5 to 0.6 attrition wear of concrete increases by about 1.4 times. Addition of sulfite-alcohol liquor lowers water/cement and results therefore in an increased resistance of the concrete to attrition.

Card 2/2

YUNG, V.N., doktor tekhnicheskikh nauk, professor; BUTT, Yu.M., doktor tekhnicheskikh nauk, professor; NEGINSKIY, M.S., kandidat tekhnicheskikh nauk; BARBAKADZE, Ye.O., inzhener.

Resistance of hydraulic engineering concretes to water attrition. Gidr. stroi. 25 no.4:34-38 My '56. (MLRA 9:9)
(Concrete) (Hydraulic engineering)

YUNG, V.N. [deceased]; BUTT, Yu.M.; BARBAKADZE, Ye.O.

Effect of active-mineral additives on the strength of quick hardening cements subjected to steaming. Trudy MKHTI no.24:15-24 '57.
(Cement—Testing) (MIRA 11:6)

YUNG, V.N. [deceased]; BUTT, Yu.M.; BARBAKADZE, Ye.O.

Optimum proportion of gypsum in quick hardening cements. Trudy MKHTI no.24:36-39 '57. (MIRA 11:6)

(Gypsum) (Cement)

BARBAKADZE, Ye.O., Cand Tech Sci -- (diss) "Study of the wearing capacity of hardened cements." Tbs, 1958, 11 pp with illustration (Min of Higher Education USSR. Tbs Order of Lenin Chem Tech Inst im D.I. Mendeleyev) 150 copies (KL, 23-58, 105)

AUTHOR: Barbakadze, Ye. O. SOV/156-58-2-44/48

TITLE: The Binding Abilities of Clinker Minerals (Svyazuyushchiye svoystva klinkernykh mineralov)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 2, pp. 377-380 (USSR)

ABSTRACT: The durability of various buildings depends to a considerable extent on the adhesive power of cement stone with fine-grained filling material in the building mortars and the coarse filling material in concrete. Several papers dealing with this subject have been compiled in the USSR and abroad (Refs 1 - 3). In connection with the investigation of the resistance of hydrated clinker minerals to pulverization the authors noticed that if filling material (sand) is introduced the susceptibility to pulverization of some minerals (C_3S) decreases while in the case of others (C_2S, C_3A, C_4AF, Ref 4) it increases. This phenomenon can be explained only by the fact that the clinker minerals show different adhesion to the filling material. The author investigated the properties mentioned in the title of the main minerals which are contained in the portland cement

Card 1/3

clinker. The fact that the binding abilities depend on cohesion as well as on adhesion served as basis for his investigations. The Kornilovich method (Ref 1) was used for the determination of the properties. The measurings of adhesion are given on table 1. The clinker minerals form the following series: C_2S, C_3S, C_4AF, C_3A. Among them portland cement shows the strongest adhesion. Adhesion to glass increases gradually. Hydrothermal processing of samples (glass plates cemented with clinker material) in the autoclave increased adhesion by several times. The smooth surface of glass often became coarse by the action of the binding agent investigated. C_3S, C_2S and portland cement produced the strongest effects. The binding ability was determined by means of the Kornilovich method which was somewhat modified by the author. The results are given in table 2. It can be seen from it that individual clinker minerals widely differ as to their cohesive and adhesive properties. As far as cohesion is concerned they formed a series: C_4AF, C_3S, C_2S, C_3A. There are 1 figure, 2 tables, and 4 references, 3 of which are Soviet.

The Binding Abilities of Clinker Minerals SOV/156-58-2-44/48

ASSOCIATION: Kafedra tekhnologii tsementa Moskovskogo khimiko-tekhnologicheskogo instituta im. D. I. Mendeleyeva (Chair of Cement Technology of the Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: October 1, 1957

Card 3/3

BUTT, Yu. M.; BARBAKADZE, Ye. O.

Effect of autoclave-curing on the hardening of portland and sandcements. Silikaty no.2:48-57 '59. (MIRA 13:6)
(Concrete--Curing) (Cement)

PANTELEYEV, A.S.; BARBAKADZE, Ye.O.

Quick-setting cements with fine aggregates. Trudy MKHTI no.27: 280-291 '59. (MIRA 15:6)

(Cement)

BUTT, Yu.M.; BARBAKADZE, Ye.O.

Effect of sand and slag on the properties of cements during hardening in an autoclave. Trudy MKHTI no.27:292-299 '59. (MIRA 15:6)
(Cement)

BARBAKADZE, Ye.O., kand.tekhn.nauk

The stability of asbestos cement in media containing hydrogen sulfide. Trudy NIIAsbesttsementa no.13:68-78 '62. (MIRA 15:12)
(Asbestos cement—Testing) (Hydrogen sulfide)

SARBAKADZE, Ye.O.

Durability of asbestos cement pipes for transporting hydrogen sulfide solutions. Trudy NIIAsbesttsementa no.16:156-163 '63. (MIRA 16:8)
(Pipe, Asbestos-cement) (Hydrogen sulfide)

BARBAKADZE, Ye.D.; FEDOROVA, K.A.

Stability of asbestos cement in sulfate waters. Trudy NIIasbestcemanta no.19:42-55 '65. (MIRA 18:9)

BARBAKOV, A.D., mashinist elektrovoza; KURBATOV, V.I., mashinist elektrovoza; CHEREPANOV, M.Kh., mashinst

Mechanics who have become engineers. Elek.i tepl.tiaga 5 no.9:30-32 S '61. (MIRA 14:10)

1. Lokomotivnoye depo Barabinsk Zapadno-Sibirskoy dorogi (for Barbakov). 2. Depo Perm' II (for Kurbatov). 3. Depo Vereshchagino Sverdlovskoy dorogi (for Cherepanov).
(Railroads--Employees education and training)

BARBAKOV, M.M.

Selecting the most advantageous diameter for fluted breaker rollers. Izv. vys. ucheb. zav.; tekh. teks. prom. no. 2:58-62 '61. (MIRA 14:5)

1. Kostromskoy tekstil'nyy institut.
(Flax processing machines)

BARBAKOV, M.M.

Investigating stalk structure decomposition in retted flax straw during flexure and breakage. Izv.vys.ucheb.sav.; tekh.tekst.prom. no.4:61-72 '58. (MIRA 11:11)

1. Kostromskoy tekstil'nyy institut.
(Flax--Testing)

BARBAKOV, M.M., Cand Tech Sci -- (diss) "Study of the process of the breaking of flax fibrous material in brakes." Mos, 1959, 14 p (Min of Higher Education USSR. Mos Textile Inst) 150 copies

(KL, 30-59, 114)

SUSLOV, N.N.; BARBAKOV, M.M.

Using an electric strain gauge for the study of the breaking process. Izv.vys.ucheb.zav.; tekh.tekst.prom. no.1:75-78 '59. (MIRA 12:6)

1. Kostromskoy tekstil'nyy institut.
(Strain gauges)
(Textile machinery--Testing)

SUSLOV, N.N.; BARBAKOV, M.M.

Forces acting on the material in the crushing area of the fluted rollers of the breaker. Izv.vys.ucheb.zav.;tekh.tekst.prom. no.4:50-54 '60. (MIRA 13:9)

1. Kostromskoy tekstil'nyy institut.
(Flax processing machinery)

DIA DRAFT 15

Barbalat, B. Sur les fonctions monotones. Bull. Math. Soc. Roumaine Sci. 47, 62–65 (1946).

The function $f(x)$ is defined and bounded on $[a, b]$; $M[a, x]$, $m[a, x]$ are the supremum and infimum, respectively, of $f(x)$ on $[a, x]$; $V[a, x]$ is the total variation, $\omega[a, x]$ the oscillation of $f(x)$ on $[a, x]$. If $f(x)$ is monotone, then $V[a, x] = |f(x) - f(a)| = \omega[a, x]$, $\omega[a, b] = \omega[a, x] + \omega[x, b]$. It is shown that if these conditions are satisfied then $f(x)$ is monotone. *R. L. Jeffery* (Kingston, Ont.).

Mathematical Reviews, Vol. 9 No. 9

BARBALAT, I.

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Barbalat, I. Limites multiples dans un espace uniforme. Acad. Repub. Pop. Române. Bul. Şti. Secţ. Şti. Mat. Fiz. 4, 311–317 (1952). (Romanian. Russian and French summaries)

Some straightforward extensions of a well-known result of Pringsheim on convergence of double sequences.

V. L. Klee (Seattle, Wash.).

10-28-54 LL

BARBALAT, I.

Barbălat, I. Les théorèmes de Zorn et Kneser dans la théorie des ensembles ordonnés. Acad. Repub. Pop. Române. Bul. Şti. Secţ. Şti. Mat. Fiz. 4, 751–762 (1952). (Romanian. Russian and French summaries)

The paper is connected with two objections to reasoning by Witt [Math. Nachr. 4, 434–438 (1951); these Rev. 12, 596] concerning Zorn's Lemma, and Kneser's Lemma [if each well-ordered subset of an ordered set S is bounded from above, then each mapping f of S into itself such that $fx \geqq x$ has at least one fixed point; cf. Math. Z. 53, 110–113 (1950); these Rev. 12, 323]. The proof of Kneser's Lemma is based upon this statement: If S is inductive and contains the upper boundary of each bounded subset, and if for each nonvoid chain $L \subseteq S$ the relation $x < \sup L$ implies the existence of an $l_0 \in L$ such that $x < l_0$, then there is no mapping f from S to S so that $fx > x$ and so that $x < f(y)$ implies $x \leqq y$. The conclusion and reasoning contained in the paper are quite similar to those in Imoto, Math. J. Okayama Univ. 1, 167–176 (1952) [these Rev. 14, 27].

G. Kurepa.

BARBALAT, I.

3080

1 - P/W

Barbălat, I. Solutions bornées et solutions périodiques pour certaines équations différentielles non linéaires du second ordre. I. Acad. Repub. Pop. Române. Bul. Şti. Secţ. Şti. Mat. Fiz. 5, 393–402 (1953). (Romanian. Russian and French summaries)

Barbălat, I. Solutions bornées et solutions périodiques pour certaines équations différentielles non linéaires du second ordre. II. Acad. Repub. Pop. Române. Bul. Şti. Secţ. Şti. Mat. Fiz. 5, 503–515 (1953). (Romanian. Russian and French summaries)

Let $\ddot{x}+f(x,\dot{x})\dot{x}+g(x)=e(t)$, e continuous and bounded for all t, f, g continuous for all x, $\dot{x}$. The following alternative assumptions on f, g are considered: (i) (first note) $g(x)/x\geq 1$, when $|x|>a>0$; $f(x,y)\cdot|y|\to\infty$ when $|y|>a$, $x^2+y^2\to\infty$, $f(x,y)>-M$ when $|x|>a$, $|y|\leq a$, $xy>0$; (ii) (second note) $|g|\to\infty$ when $|x|\to\infty$, $xg>0$ when $|x|>a>0$; $f(x,y)\cdot|y|^\alpha>m>0$, $0\leq\alpha<1$ when $|x|>a$, $|y|>a$, $f(x,y)\cdot|y|>-M$, $M>0$, when $|x|>a$, $|y|<a$, $xy>0$, $f(x,y)>-M$ when $|x|\leq a$, $|y|>a$. Then, if either (i) or (ii) is satisfied, there is a constant $k>0$ depending exclusively on f, g, e such that for any solution $|x|$ and $|\dot{x}|$ are ultimately bounded by k; if e is periodic and if the existence and uniqueness of Cauchy's problem are assured, there is at least one harmonic vibration.

J. L. Massera (Montevideo).

Barbălat, I.

Barbălat, I. Une propriété globale des trajectoires d'un système d'équations différentielles équivalent à l'équation des oscillations non linéaires de Liénard. Acad. Repub. Pop. Romîne. Bul. Şti. Secţ. Şti. Mat. Fiz. 6, 853–860 (1954). (Romanian. Russian and French summaries)

This paper extends a result of the reviewer on the equation of van der Pol [Contributions to the theory of non-linear oscillations, v. 2, Princeton, 1952, pp. 61–73; MR 14,557] as follows. Given the Liénard equation

$$\ddot{x}+f(x)\dot{x}+x=0 \tag{1}$$

or equivalently the system

$$\begin{cases}\dot{x}=y-F(x),\\ \dot{y}=-x,\end{cases}\qquad F=\int_0^x f(\xi)\,d\xi, \tag{2}$$

(over)

suppose that: (a) f is continuous for every x; (b) there is an $a>0$ such that $xF(x)>0$ outside $|x|\geqq a$; likewise $f(x)\geqq 0$ for $|x|\geqq a$; (c) arbitrarily near $x=0$ there are values for which $F(x)\neq 0$; (d) for some $b>a$, $F(x)/x>1$ when $x>b$; (e) $F(x)/x$ is increasing for $x>0$, but decreasing for $x<0$. Under these circumstances there is a unique limit-cycle γ and every path of (2) (origin excepted) $\to\gamma$ as $t\to\infty$.

In his proof the reviewer leaned heavily upon the "polynomial" properties of his system. A different approach has been required here. [Additional reference: G. E. H. Reuter, Proc. Cambridge Philos. Soc. 47, 49-54 (1951); MR 12, 827.] *S. Lefschetz* (Princeton, N. J.).

LFH

BARBALAT, I.

Halanay, A. Points singuliers et solutions périodiques. Acad. R. P. Romîne. Bul. Şti. Secţ. Şti. Mat. Fiz. 7 (1955), 319-324. (Romanian. Russian and French summaries)

The author considers the real system

$$(1)\qquad dx/dt=Q(x, y)+\mu X(x, y, t),$$
$$dy/dt=P(x, y)+\mu Y(x, y, t),$$

where P, Q are homogeneous polynomials of the same degree and X, Y are analytic functions of x, y, t and periodic in t. Denote by $f(k)$ the function

$$f(k)=P(1, k)/Q(1, k)$$

and suppose that: (1) the equation $f(k)=k$ has at least two real roots; (2) $f'(k)<0$. Then for all μ sufficiently small in absolute value, system (1) has periodic solutions. Ważewski's topological theory is used [Ann. Soc. Polon. Math. 20 (1947), 279-313; MR 10, 122] and a theorem of Massera [Duke Math. J. 17 (1950), 457-475; MR 12, 705].

L. Cesari (Lafayette, Ind.).

Barbălat, I. Remarques sur la note "Points singuliers et ~~solutions~~ périodiques". Acad. R. P. Romîne. Bul. Şti. Secţ. Şti. Mat. Fiz. 7 (1955), 325-328. (Romanian.

HALANAY A

Russian and French summaries)

The present paper extends the result of the paper reviewed above concerning systems of the form

$$(1)\qquad dx/dt = Q(x, y) + \mu X(x, y, t),$$
$$dy/dt = dy/dt = P(x, y) + \mu Y(x, y, t),$$

where now Q, P are supposed to be real functions of x and y, holomorphic in a neighborhood of the origin $x = y = 0$. In the present paper results and notations of S. Lefschetz [Contributions to the theory of nonlinear oscillations, v. II, Princeton, 1952, pp. 61–73; MR 14, 557] are used. If the analytic function defined by $R(x, y) = xQ - yP = 0$ has only single branches through the origin which have no contacts there and divide a neighborhood of the origin in at least four sectors all of the type I in the sense of S. Lefschetz (loc. cit.), then system (1) has periodic solutions for μ sufficiently small in absolute value.

L. Cesari (Lafayette, Ind.).

Albrecht, Felix. Points singuliers et solutions périodiques. Com. Acad. R. P. Romine 5 (1955), 1035–1040. (Romanian. Russian and French summaries)

This paper concerns a more straightforward application

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[illegible] existence of periodic solutions of the system

$$(1)\qquad dx/dt = Q(x, y) + \mu X(x, y, t),$$
$$dy/dt = P(x, y) + \mu Y(x, y, t),$$

already discussed in the two papers reviewed above. Here X, Y are functions of class C'' of x, y, t, periodic in t with period ω. Also, Q and P are supposed to be real analytic functions of x and y in a neighborhood Ω of the origin $x=y=0$ which is an isolated singularity. If all real branches through the origin defined by $R(x, y)=xQ+yP=0$ are single, and the set Ω has at least four points of "external sliding" in the sense of Ważewski, and the points p of internal sliding satisfy the condition

$$(2)\qquad T^{\varepsilon}(p) \cap \mathrm{Ext}\,(\Omega) \neq \emptyset,$$

then system (1) has at least one periodic solution for every μ in absolute value sufficiently small. In (2) $\emptyset$ is the null set, $\varepsilon = \pm 1$, and $T^{\pm}(p_0)$ denotes the projection on the xy-plane of the half-trajectory $x=x(t)$, $y=y(t)$, $t \geq t_0$ $[t \leq t_0]$ through p_0 at $t=t_0$. Finally, in (2) we have $\varepsilon=+1$, or $\varepsilon=-1$, according as $dr/dt>0$, or <0, $r=(x^2+y^2)^{\frac{1}{2}}$, this sign being constant in each sector around the origin defined in Ω by the real branches above. *L. Cesari.*

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Barbălat, I. L'allure globale des solutions de certaines ~~équations~~ différentielles non linéaires de second ordre. Acad. R. P. Romîne. Bul. Şti. Secţ. Şti. Mat. Fiz. 7 (1955), 653–666. [Romanian. Russian and French summaries]

1 - F/W

This paper extends the reviewer's results on the complete phase portrait of the system of two equations equivalent to van der Pol's equation [Contributions to the theory of nonlinear oscillations, v. 2, Princeton, 1952, pp. 61–73; MR 14, 557] to

(1) $$\ddot{x}+p(x)\dot{x}+x=0$$

and the equivalent system

(2) $$\dot{x}=y-P(x),\ \dot{y}=-x,\ p(x)=\sum_{i=0}^{2n} a_i x^i,\ P(x)=\int_0^x p(\xi)\,d\xi,$$
$$0\leq p<2n.$$

(over) $\frac{1}{3}$

BarNAT-AT, I,

Theorem 1. If p is even let $a_p<0$, if p is odd let the first coefficient a_{2i}, $i>p$, $\neq 0$, be <0. Then there exists a stable limit cycle Γ_1, an innermost limit cycle Γ_2 and an outermost limit cycle Γ_3. Γ_1 is interior-stable, Γ_3 is exterior-stable. Between the limit-cycles or between Γ_2 and the origin the trajectories spiral in the usual manner. Outside Γ_3 the behavior is as for van der Pol's equation. Theorem 2. Let

$$p(x)=\sum_{i=s}^{n} a_{2i}x^{2i},\ 0\leq s<n,\ a_{2s}<0,\ a_{2n}>0,$$

and suppose that among the real roots of

$$\sum a_{2i}(2i+1)^{-1}x^{2(i-n)}=0$$

only one is of odd multiplicity. Then the global phase-portrait is the same as for van der Pol's equation. Theorem 3. Let

$$p(x)=\sum_{i=p}^{2n} a_i x^i,\ 0\leq p<n,\ n\geq 1,\ a_{2n}>0.$$

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Barbalat, I

(a) If p is odd let a_{p+2s+1} be the next odd coefficient, and suppose that $\sum_{i=s}^{s} a_{2i}(2i+1)^{-1}x^{2(i-s)}=0$, $h=1(p+1)+k$, possesses no real root of odd multiplicity. (b) If $p=2s$ let $a_{2s}>0$ for $s>0$, or else $0<a_0<2$ for $s=0$ and suppose the same as just stated for the real roots of

$$\sum_{i=s}^{s} a_{2i}(2i+1)^{-1}x^{2(i-s)}=0.$$

Then the origin is a positively stable focus for all trajectories, and for $t\to-\infty$ the behavior is the same as for van der Pol's equation in the infinite region.

S. Lefschetz (Mexico, D.F.).

Bărbălat, I.; et Halanay, A. Un critère d'existence d'un cycle limite stable pour l'équation des oscillations non linéaires. Acad. R. P. Romîne. Stud. Cerc. Mat. 7 (1956), 81–94. [Romanian. Russian and French sum-

1-F\W

BARBALAT, I.

5150

Barbălat, I. Ensembles cofinals. Bul. Inst. Politehn. Bucureşti 18 (1956), no. 3–4, 51–55. (Romanian. Russian and French summaries)

The author is concerned with the possibility of isomorphism between some cofinal subsets of two given cofinal subsets of a partially ordered [illegible]

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BARBALAT, I.; MIHAILAY, A.

Periodic solutions of the systems of nonlinear differential equations. In French. p. 395.

REVUE DE MATHEMATIQUES PURES ET APPLIQUEES. JOURNAL OF PURE AND APPLIED MATHEMATICS. (Academia Republicii Populare Romine) Bucuresti, Romania. Vol. 3, no. 3, 1958.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 7, July 1959.

Uncl.

BARBALAT, I.

~~Surname (in caps)~~; Given Names

Country: Rumania

Academic Degrees: --

Affiliation: --

Source: Bucharest, Comunicarile Academiei Republicii Populare Romine, No 4, 1961, pp 383-390.

Data:

"Functions with Uniformly Limited Average Values."

37589

S/044/62/000/004/026/099
C111/C444

AUTHOR: Barbalat, I.

TITLE: Almost periodic solutions of non-linear differential equations

PERIODICAL: Referativnyy zhurnal, Matematika, no. 4, 1962, 36, abstract 4B156. (Comun, Acad. RPR, 1961, 11, no. 2, 155 - 159)

TEXT: Let

$$dx/dt = f(t, x) \quad (1)$$

be a differential equation of first order. Proved is the theorem: If $f(t, x)$ and $f_x(t, x)$ are almost periodic with respect to t, uniform with respect to $x \in I$ (I being an interval), and if besides the mean value of the function $f_x(t, x)$ satisfies the condition $M\{f_x(t, x)\} \leqslant -k < 0$ (or $\geqslant k > 0$), when a solution $x(t) \subset I$, continuable to the right (left) side, exists, then (1) possesses a unique almost periodic solution in I. An analogous property holds, if $f(x, t)$ is asymptotically periodic with respect to t in the sense of Frechet.

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uniform with respect to $x \in I$. One points to the fact that the theorem can be extended to a non-linear triangle system.

[Abstracter's note: Complete translation.]

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S/044/62/000/008/012/073
C111/C333

AUTHORS: Albrecht, F., Barbalet, I.

TITLE: Turbulent systems generated by non-linear dynamic systems

PERIODICAL: Referativnyy zhurnal, Matematika, no. 8, 1962, 40, abstract 8B180. ("Comun. Acad. RPR," 1961, 11, no. 9, 1051-1057)

TEXT: Considered are 2-dimensional autonomous dynamic turbulent systems E(Rzh. Mat., 1953, 1185). They are described by two systems of ordinary differential equations

$$(I)\ \begin{cases} \dot{x} = X_1(x,y) \\ \dot{y} = Y_1(x,y) \end{cases} \qquad (II)\ \begin{cases} \dot{x} = X_2(x,y) \\ \dot{y} = Y_2(x,y) \end{cases} \qquad (1)$$

the right sides of which are defined in the half planes

$$Ax + By + C_1 \geqslant 0 \quad \text{for system I} \qquad (2)$$
$$Ax + By + C_2 \leqslant 0 \quad \text{for system II}$$

and satisfy there the necessary existence and uniqueness conditions.

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Here A, B, C_1, C_2 are fixed real numbers, $C_1 < C_2$. We consider the strip Π where both inequalities (2) are satisfied. Outside of this strip the turbulent system E is defined in the usual manner through the systems of equations I and II, respectively; either I or II holds depending upon whether the first or the second inequality is fulfilled in (2). In strip Π the turbulent system E is variously defined depending on the following three cases:

(I) If the point $M(0) = \{x(0), y(0)\}$ (which determines the initial state of the turbulent system E at the moment $t = 0$) is in the interior $\mathring{\Pi}$ of the strip Π, then a system (A) is selected at random from (1) which can be system (I) as well as system (II). The chosen system (A) completely defines the piece I of the path of E which begins at $M(0)$ and is completely situated in $\mathring{\Pi}$. The transition (or "switching") to the other system (1) (which is different from (A)) happens at the boundary of Π in the half plane in which (A) does not hold. If this boundary is not reached by path I at a time $t > 0$, then there is no switching.

(II) If the path starts in the first half plane of (2), then the switching occurs at the boundary of the other half plane of (2).

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(III) The case where the path begins in the second half plane of (2) is analogous to case (II).

The authors generalize several previously known methods for determining stable limiting cycles for the equations of Lienard, Van der Pol, especially for the case of the turbulent system I described above. Herein they use mainly theorems due to Bendixon which were carried over to the considered case by Albrecht (Rzh. Mat., 1961, 1B141). We point out that the case where the systems I and II of (1) are Lienard equations and $A = C_1 = C_2 = 0$ was considered earlier by G. P. Kiroshnichenko, who also used Bendixon's results (cf., Automatika i Telemekhanika, 1960, 21, no. 3, 293-300).

[Abstracter's note: Complete translation.]

S/035/62/000/008/084/090
A001/A101

AUTHOR: Barbălat, Ion

TITLE: Solution of large systems of linear equations

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 8, 1962, 29, abstract 8G250 (Gaz. mat. şi fiz.", 1962, v. A14, no. 2, 59 - 70, Rumanian; Russian and French summaries)

TEXT: Some equations are listed whose solution is reduced to solution of systems of linear algebraic equations. Various methods for the latter are briefly described.

[Abstracter's note: Complete translation]

Card 1/1

BARBALAT, I.

"The theory and application of the Liapunov direct method" by Wolfgang Hahn. Reviewed by I. Barbalat. Studii cerc mat 14 no.4:702 '63.

BARBALAT, I.

"The theory and application of the Liapunov direct method" by Wolfgang Hahn. Reviewed by I. Barbalat. Studii cerc mat 14 no.4:702 '63.

BARBALAT, Ioan; VAIDA, Dragos.

The boundary case of the Wittmeyer criterion for the Gauss-Seidel method. Bull math Rum 4 no.3/4:3-18'60.

SOSNOVA, P.S.; BARBALAT, S.D.; KARMAZINA, N.Ya.; ROGOL', M.G.

Some current problems of penumonia in infants. Zdravookhranenie 5 no.3:11-16 My-Je '62. (MIRA 16:1)

1. Iz kafedry fakul'tetskoy i gospital'noy pediatrii (zav. dotsent P.S.Sosnova) Kishinevskogo meditsinskogo instituta.
(PNEUMONIA) (INFANTS--DISEASES)

BARBALATA, St., economist

The trade-union elections. Constr Buc 16 no.7374 22 F'64.

1. Din subredactia voluntara de la Galati.

AMAR, C.; BALEA, A., ing.; BARBALATA, St.; CRACIUN, I.; ENESCU, C.; IONASCU, I.

The Milky Way... Constr Buc 16 no.742:4 28 March 1964.

CRACIUN, Ion, economist; SANDA, Constantin; BARBALATA, St.; PAVLOVICI, Aurel, economist; COVAN, C., economist

New construction sites. Constr Buc 16 no. 743:1 4 April '64.

1. Din subredactia voluntara de la Balati (for Barbalata).

COSMA, Frederic; KISS, Ladislau, tehnician de normare; IENCIU, Traian; BARBALATA, St.; ENESCU, Constantin, tehnician; HOTUPAN, Florian, corespondent; BONCUT, Remus

Problems connected with the organization of production brigades. Constr Buc 16 no.746:3 25 April'64.

1. Trustul Regional de Constructii de Locuinte, Cluj (for Kiss). 2. Seful serviciului organizarea muncii, Trustul Regional de Constructii de Locuinte, Cluj (for Cosma). 3. Seful serviciului organizarea muncii de la grupul de santiere nr.2 Sibiu, Trustul Regional de Constructii de Locuinte, Brasov (for Ienciu). 4. Seful serviciului organizarea muncii de la grupul de santiere nr.1, Trustul Regional de Constructii de Locuinte, Galati (for Barbalata). 5. Seful serviciului organizarea muncii, Directia generala constructii-montaj, Bucuresti (for Boncut). 6. Trustul Regional de Constructii de Locuinte, Arges (for Enescu).

BARBALATA, St., economist

In the agricultural and zootechnic sector. Constr Buc 15 no.726: 1 7 D '63.

COSMA, V.; BARBALATA, St., economist

Reserves for even better results in construction. Constr Buc 16 no. 749:3 16 May '64.

1. Chief accountant of the Nr. 1 Construction Site Group, Regional Trusts for Housing Construction, Galati (for Cosma).
2. The Galati Branch of the Voluntary Editorial Office of "Constructorul" (for Barbalata).

ILIE, Ion; RASCA, Dumitru; CRACIUN, Ion, economist; SIRIOPOL, Telemac; BARBALATA, Stanciu; CRISAN, Bazil, ing.; CIRSTOIU, Valentin; GHINEA, Vasile, corespondent

Enthusiastic socialist competition. Constr Buc 16 no. 750:1 23 May '64.

1. The Galati Branch of the Voluntary Editorial Office of "Constructorul" (for Siriopol, Barbalata).
2. Head of the Department of Production, Regional Trust for Housing Construction, Hunedoara (for Crisan).

BARBALATA, Stanciu, tehnician

Control and efficacity. Constr Buc 16 no. 740:3 14 March 1964.

1. Subredactia voluntara de la Galati.

BARBALATA, St., economist

Effects 46 technic l and organizatory measures. Constr Buc 16 no. 748:2 9 May '64.

1. The Galati Branch of the Voluntary Editorial Office of "Constructorul."

BARBALATA, Stanciu

A warm congratulation. Constr Buc 16 r.757:1 11 July '64.

1. Galati Branch of the Voluntary Editorial Office of "Constructorul."

HARALAMBIE,T., tehnician; GRACIUN,Ion, economist; MARCHEAN, Ioan, ing.; JURCA, Nicanor, ing.; SIGISMUND,S.; BARBALATA, Stanciu; SIRIOPOL,Telemah; NEAGU, Ion,ing.

Prefabricated materials for hotbeds; a veterinary laboratory in Constanta; the new club house in the city of Victoria; what the planners of Suceava are proposing; constructions in use in Galati. Constr Bue 16 no.735:1 8 F '64.

1. Din subredactia voluntara de la Galati (for Barbalata, Siriopol). 2. Directia de sistematizare, arhitectura si proiectare a constructiilor, Oltenia (for Neagu).

BARBALATA, Stanciu

Internal reserves. Constr Buc 15 no.725:4 30 N '63.

1. Seful serviciului organizarii muncii la intreprinderea de constructii no.1 a Trustului Regional de Constructii de Locuinte, Galati.

BARBALATA, Stanciu

Technical standards stimulate the increase of productivity.
Constr Buc 16 no.73483 1 F'64.

1. Seful serviciului organizarea muncii de la grupul de santiere nr.1, Trustul Regional de Constructii de Locuinte, Galati.

BARBALATA, Stancin

Apartment will be delivered ahead of the term. Constr Iuc
16 no.754:1 20 J '64.

1. The Cluati Branch of the Voluntary Editorial Office of
"Constructorul."

BARBALATA, St.

Half-done work. Constr Buc 16 no.759:3 25 Jl '64.

1. The Galati Branch of Voluntary Correspondents of "Constructorul."

BARBALATA, Stanciu, economist [illegible], Radse, correspondent

Can it really not be [illegible]? Constr Bul 16 no.7:3 10 0'64

1. The Galati Branch of the Bucharest Editorial Office of the "Constructorul" (for Barbalata).